Computer Information Technology

Computer Information Technology
Associate of Applied Science Degree
Network Administrator Track
Software Developer Track
Web Developer Track
MIS/Project Management Track
Game Developer Track
Cisco Certified Network Administrator (CCNA) Discovery Certificate
Computer Literacy Certificate
Database Specialist Certificate
Information Security Certificate
Network Administrator Certificate
Software Developer Certificate
System Z Foundations Certificate

The Computer Information Technology curriculum provides graduates with a foundation of logic, programming, operating systems, applications, systems analysis, and networking through a core set of courses. Learners may choose to specialize in Network Administrator, Software Developer, User Support, or Web Developer. CIT offers a number of industry subject-specific certificates in database, networking, hardware/software, and applications.

Upon completion of the associate degree in Computer Information Technology, Network Administrator Track, the graduate will be able to:

- Participate in collaborative projects utilizing the Systems Development Life Cycle (SDLC).
- Determine project requirements of a computer network system.
- Create project documentation using PC-based applications software.
- Install a variety of server configurations using current network software and protocols.
- Apply workstation configurations using a variety of operating systems commands.
- Integrate project requirements utilizing current database technology.
- Apply operating systems commands for effective disk management.
- Complete a series of exercises to prepare for a popular vendor certification program.

Upon completion of the associate degree in Computer Information Technology, Software Developer Track, the graduate will be able to:

- Determine project requirements.
- Design a targeted information technology.
- Develop applications using programming languages.
- Identify networking concepts.
- Prepare project documentation.
- Participate in collaborative projects utilizing the Systems Development Life Cycle (SDLC).

Upon completion of the associate degree in Computer Information Technology, Web Developer, the graduate will be able to:

- Participate in collaborative projects utilizing the Systems Development Life Cycle (SDLC).
- Determine project requirements.
- Create project documentation using PC-based applications software.
- Develop applications using Web programming languages.
- Create a multiple page, multiple presentation Web site.
- Integrate project requirements for an e-commerce Web site using current database and networking technology.
- Complete a series of exercises to prepare for a popular vendor certification program.
- Apply operating systems fundamentals for effective disk management.

Upon completion of the associate degree in Computer Information Technology, MIS/Project Management, the graduate will be able to:

- Participate in collaborative projects utilizing the Systems Development Life Cycle (SDLC).
- Determine project requirements of a computer Network System.
- Create documentation using PC-based applications software.
- Define project goals clearly.
- Design and produce a UML requirement model.
- Implement a UML design in IT Project.
- Determine task dependencies and schedules.
- Assign and optimize resources.
- Produce the implementation plan.
- Manage and respond to change.
- Measure and present results effectively.
- Apply practical aspects learned in the classroom by managing or assisting in managing IT projects.

Upon completion of the associate degree in Computer Information Technology, Game Developer, the graduate will be able to:

- Demonstrate an understanding of the history, current industry and occupations that constitute the video game industry.
- Develop a broad understanding of the components of a successful video game by working collaboratively with students in the design area
- Apply creative thinking and problem solving skills

through the completion of a collaborative major capstone project.
- Understand the roles and responsibilities of team members and their collaboration in all phases of design, development and implementation
- Demonstrate appropriate software and programming skills that directly support video game development processes.
- Be able to work as part of a larger technical/design team to complete tasks on time and on budget.
- Possess the necessary depth of understanding of complex principles and details and know how to apply these fundamentals and details by undertaking open-ended technical and creative projects.
- Understand the fundamentals of game development for both Windows and specific consoles such as Xbox.
- Develop a comprehensive professional portfolio to be used in pursuing jobs and/or internship opportunities.

In addition to many of the Computer Information Technology competencies, a graduate with a Certificate in the Software Developer Track will be able to:
- Demonstrate techniques of object analysis and object design.
- Design and code programs in C++ and Visual Basic.NET.
- Debug a C# or Visual Basic.NET program.
- Develop Web front-end applications.
- Utilize a database for a Web application.

In addition to many of the Computer Information Technology competencies, a graduate with a Certificate in Database Specialist will be able to:
- Prepare a systems design utilizing a database management system.
- Design and implement an Oracle and Access database.
- Perform basic administration functions of a database management system.
- Understand data warehousing systems.
- Use the Visual Basic.NET language to interface with a database management system.

In addition to many of the Computer Information Technology competencies, a graduate with a Certificate in Information Security will be able to:
- Describe and analyze security threats.
- Protect and organization's system and data.
- Design disaster recovery strategies for the enterprise.
- Design and implement computer forensics strategies.
- Assess network vulnerabilities.
- Recognize and respond to security threats.
- Design and develop security audits for an organization.
- Understand the ethical issues related to network security.
- Design and implement wireless networks.
- Work with VPNs and firewalls.
- Protect Internet connections and intranets as well as critical data from attacks.
- Learn how to carry out and implement secure communications across unsecured networks.

In addition to many of the Computer Information Technology competencies, a graduate with a Certificate in Network Administration will be able to:
- Describe the various types of distributed processing systems and operating systems.
- Design, create, and operate a distributed DBMS.
- Use at least one major LAN operating system.
- Complete an industry standard network system examination.
- Design, create, and implement a distributed processing system to support the information processing requirements for a large information management organization to include installing a DBMS.

In working toward the Computer Literacy Certificate, the student will learn the fundamental components and terminology of personal computer hardware and software basic concepts. This certificate is designed for beginning computer users to develop computer literacy skills. Upon completion of the Computer Literacy Certificate, the student will be able to:
- Use the Windows operating system to manage files and folders, including creating, renaming, copying, deleting, and moving.
- Demonstrate proficiency within the Blackboard environment.
- Navigate and explore the Internet and the World Wide Web utilizing Microsoft Internet Explorer.
- Utilize the Internet as an effective research tool.
- Describe the basic elements and terminology of the Windows operating system.
- Create and edit Word documents including a research paper, a resume, and a business letter.
- Create and format an Excel worksheet with embedded charts, formulas, and functions.
- Perform a What-if Analysis in Excel.
- Create and use an Access database including tables, queries, and reports.
- Create a slide show in PowerPoint.
- Integrate Office 2003 Applications and the WWW.

The Cisco CCNA Discovery Certificate is a curriculum that provides foundational networking knowledge, practical experience, and soft-skills development to prepare students for entry-level careers in IT and networking. The curriculum focuses on networking for simple home or small office networks to complex enterprise networks. Students are introduced to advanced technologies such as voice, video, wireless and security and gain hands-on experience with switches, routers, cables and other networking technologies. The Cisco Discovery Certificate curriculum prepares students

for two different Cisco certification exams, Cisco Certified Entry Network Technician (CCENT), and Cisco Certified Network Associate (CCNA).

The **System Z Foundations Certificate** was developed to address industry's continuing need for skilled professionals with mainframe skills. This certificate was designed by area companies and IBM Corporation, which will provide access to hardware/software, course materials/speaker notes, student textbooks, etc. The System Z Foundations certificate is a 4-course sequence focused on the basics of enterprise networking. This certificate is designed for individuals with significant working experience in IT or current students with the permission of the instructor.

Note: Some courses may require prerequisites, please ensure to fulfill required prerequisites or meet with your program advisor to discuss.

Specific Certificate Admissions Information

Listed below are additional requirements for admission to the Certificate programs.

Database Specialist Certificate

- Complete MATH 102 and faculty advisor approval

Information Security Certificate

- CIT 151 Networking 1

Network Administrator Certificate

- Complete CIT 151 Networking 1

Software Developer Certificate

- MATH 104 Intermediate Algebra
- Work experience approved by the Department Chair

Computer Information Technology Associate Degree, Network Administrator Track

COURSE		CR
Quarter 1		
CIT 101	PC Applications	3
CIT 103	Computer Concepts and Logic	3
CIT 121	PC Operating Systems	3
CIT 151	Networking 1	3
ENGL 101	Beginning Composition	3
BMGT 257	Project Management Principles	3
TOTAL CREDIT HOURS		**18**
Quarter 2		
CIT 102C	PC Applications 2 Module 3 (Access)	1
CIT 123	Workstation Installation and Configuration	3
CIT 251	Networking 2	3
MATH 104	Intermediate Algebra	5
MKTG 226	Customer Services Principles and Practices	4
ENGL 102	Essay and Research	3
TOTAL CREDIT HOURS		**19**
Quarter 3		
CIT 175	Systems Analysis 1	4
CIT 233	Expert Access	3
CIT 250	Network Comm. Systems	3
CIT 252	Enterprise Networking	4
ACCT 269	Foundations of Accounting	5
TOTAL CREDIT HOURS		**19**
Quarter 4		
CIT 171	Database Administration/SQL	4
CIT 253	TCP/IP	3
CIT 255	Server Admin I	4
IMMT 112	Fundamentals of Interactive Design	3
LAWE 215	Introduction to Cyberlaw	3
TOTAL CREDIT HOURS		**17**
Quarter 5		
CIT 163	Visual Basic 1	4
CIT 257	Network Security	3
CIT 271	Data Mining and Data Warehousing	4
HUM XXX	Humanities 111, 112, 113, 151, 152, or 224	5
COMM 204	Technical Writing	3
TOTAL CREDIT HOURS		**19**
Quarter 6		
CIT 258	Wireless Networking	3
CIT 290/299	CIT Seminar/Practicum ***(or)*** CIT 282 Capstone Web/Net	5
SSCI XXX	SSCI 100, 101, 102, 104, or 105	5
COMM 105	Speech ***(or)***	
COMM 110	Conference and Group Discussion	3
TOTAL CREDIT HOURS		**16**
TOTAL DEGREE CREDIT HOURS		**108**

Computer Information Technology Associate Degree, Software Developer Track

COURSE		CR
Quarter 1		
CIT 101	PC Applications I	3
CIT 103	Computer Concepts and Logic	3
MATH 104	Intermediate Algebra	5
ACCT 269	Foundations of Accounting	5
ENGL 101	Beginning Composition	3
TOTAL CREDIT HOURS		**19**
Quarter 2		
CIT 121	PC Operating Systems	3
CIT 163	Visual Basic 1	4
CIT 175	Systems Analysis 1	4
ENGL 102	Essay and Research	3
CIT 110	Unified Modeling Language	3
TOTAL CREDIT HOURS		**17**
Quarter 3		
CIT 145	HTML	3
CIT 151	Networking 1	3
CIT 263	Visual Basic 2	4
CIT 275	Systems Analysis 2	4
MKTG 226	Customer Services Principles and Practices	4
TOTAL CREDIT HOURS		**18**
Quarter 4		
CIT 147	JavaScript Fundamentals	3

CIT 179	C# Programming I	4
CIT 169	Java Programming 1	3
CIT 173	Database Programming	3
CIT 264	Visual Basic 3	4
COMM 105	Speech ***(or)***	
COMM 110	Conference and Group Discussion	3
TOTAL CREDIT HOURS		**20**

Quarter 5

CIT 279	C# Programming 2	4
CIT 269	Java Programming 2	3
CIT 273	Database Systems	3
COMM 204	Technical Writing	3
HUM XXX	HUM 111, 112, 113, 151, 152, or 224	5
TOTAL CREDIT HOURS		**18**

Quarter 6

CIT290/299	CIT Seminar/Practicum ***(or)***	
CIT 281	Capstone for Software Developer	5
BMGT 111	Management	5
IMMT 122	Digital Media Preparation	3
SSCI XXX	SSCI 100, 101, 102, 104, 105	5
TOTAL CREDIT HOURS		**18**
TOTAL DEGREE CREDIT HOURS		**110**

Computer Information Technology Associate Degree, Web Developer Track

COURSE		**CR**
Quarter 1		
CIT 101	PC Applications I	3
CIT 103	Computer Concepts and Logic	3
MATH 104	Intermediate Algebra	5
SSCI XXX	Social Sciences 100, 101, 102, 104, 105	5
ENGL 101	Beginning Composition	3
TOTAL CREDIT HOURS		**19**

Quarter 2

CIT 121	PC Operating Systems	3
CIT 102	PC Applications 2	3
CIT 139	Web Essentials	3
CIT 175	Systems Analysis 1	4
ENGL 102	Essay and Research	3
TOTAL CREDIT HOURS		**16**

Quarter 3

CIT 145	HTML	3
CIT 163	Visual Basic 1	4
CIT 233	Expert Access	3
COMM 207	Writing for the Web	3
IMMT 112	Fundamentals of Interactive Design	3
TOTAL CREDIT HOURS		**16**

Quarter 4

CIT 212	Web Database Development	3
CIT 151	Networking 1	3
CIT 169	Java Programming 1	3
MKTG 111	Marketing Principles	5
ACCT 269	Foundations of Accounting	5
TOTAL CREDIT HOURS		**19**

Quarter 5

CIT 147	JavaScript Fundamentals	3
CIT 213	Designing an e-Commerce Website	3
CIT 269	Java Programming 2	3
COMM 204	Technical Writing	3
MKTG 226	Customer Service Principles and Practices	4
IMMT 262	Web Publishing Site Design	4
TOTAL CREDIT HOURS		**20**

Quarter 6

CIT 171	Database Administration/SQL	4
CIT290/299	CIT Seminar/Practicum ***(or)*** CIT 282 Capstone Web/Net	5
HUM XXX	HUM 111, 112, 113, 151, 152 or 224	5
COMM 105	Speech ***(or)***	
COMM 110	Conference and Group Discussion	3
TOTAL CREDIT HOURS		**17**
TOTAL DEGREE CREDIT HOURS		**107**

Vocational Education Transfer Option with The Ohio State University College of Education

The Computer Information Technology, Web Developer program at Columbus State has completed an articulation agreement with the Technical Education and Training Program of the Ohio State University College of Education. This agreement allows Computer Information Technology, Web Developer students to complete their associate degree at Columbus State, transfer their credits to Ohio State, and complete a baccalaureate degree in Technical Education and Training. Students completing the Ohio State program may be eligible for certification by the Ohio Department of Education to teach in related high school career and technical education programs throughout the State of Ohio. Interested students should contact their Columbus State department chairperson for curriculum requirements and additional details. Please note that course requirements for this transfer option may differ from the standard plan of study published in the catalog.

Computer Information Technology Associate Degree, MIS/Project Management Track

COURSE		**CR**
Quarter 1		
CIT 101	PC Applications I	3
CIT 103	Computer Concepts and Logic	3
MATH 104	Intermediate Algebra	5
ACCT 269	Foundations of Accounting	5
ENGL 101	Beginning Composition	3
TOTAL CREDIT HOURS		**19**

Quarter 2

CIT 121	PC Operating Systems	3
CIT 163	Visual Basic 1	4
CIT 110	Unified Modeling Language	3
ENGL 102	Essay and Research	3
BMGT 257	Project Management	3
IMMT 122	Digital Media Preparation	3
TOTAL CREDIT HOURS		**19**

Quarter 3

CIT 175	Systems Analysis 1	4
CIT 151	Networking 1	3
CIT 263	Visual Basic 2	4

BMGT 111	Management	5
MKTG 226	Customer Service Principles and Practices	4
TOTAL CREDIT HOURS		**20**

Quarter 4

CIT 275	Systems Analysis II	4
CIT 173	Database Programming	3
CIT 264	Visual Basic 3	4
CIT 130	MIS II: Project Management Fundamentals	3
COMM 105	Speech (or)	
COMM 110	Conference and Group Discussion	3
TOTAL CREDIT HOURS		**17**

Quarter 5

CIT 230	MIS III: Project Management Case Studies	3
CIT 251	Networking II	3
CIT 273	Database Systems	3
COMM 200	Business Communications	3
HUM XXX	HUM 111, 112, 113, 151, 152, or 224	5
TOTAL CREDIT HOURS		**17**

Quarter 6

CIT 137	Advanced Information Presentation	3
CIT290/299	Seminar and Practicum ***(or)***	5
CIT 281	Capstone for Software Developer	5
SSCI XXX	SSCI 100, 101, 102, 104, 105	5
CIT XXX	Technical Elective	4
TOTAL CREDIT HOURS		**17**
TOTAL DEGREE CREDIT HOURS		**109**

Technical Elective

CIT 241	An Intro. to the Mainframe – z/OS Basics	4
CIT 242	An Intro. to the Mainframe – Lg Scale Commercial	4
CIT 243	An Intro. to the Mainframe – Networking	4
CIT 244	An Intro. to the Mainframe – Security	4

Computer Information Technology Associate Degree, Game Developer Track

COURSE		**CR**
Quarter 1		
ENGL 101	Beginning Composition	3
IMMT 115	Survey of Digital Gaming Industry	3
MATH 148	College Algebra	5
HUM XXX	HUM 111, 112, 113, 151, 152 or 224	5
CIT 103	Computer Concepts and Logic	3
TOTAL CREDIT HOURS		**19**

Quarter 2

IMMT 188	Introduction to 3D Game Production	4
MATH 150	Pre-Calculus	5
IMMT 236	3D Modeling	4
CIT 121	PC Operating Systems	3
CIT 120	Foundations of Game Programming 1	4
TOTAL CREDIT HOURS		**20**

Quarter 3

MATH 151	Calculus and Analytic Geometry I	5
CIT 167	C++ Programming	4
CIT 127	Structured Programming	4
CIT 128	Concepts of 3D Graphics	4
ENGL 102	Essay and Research	3
TOTAL CREDIT HOURS		**20**

Quarter 4

COMM 207	Writing for the Web	3
CIT 206	Foundations of Game Programming 2	4
CIT 227	Data Structures and Algorithms	4
CIT 228	Computer Graphics 1	4
CIT 245	Introductions to Game Prototyping and Development	4
TOTAL CREDIT HOURS		**19**

Quarter 5

MATH 152	Calculus and Analytic Geometry II	5
CIT 229	Computer Graphics 2	4
CIT 246	Game Development Project – Part 1	3
PHYS 117	College Physics: Mechanics & Heat	5
TOTAL CREDIT HOURS		**17**

Quarter 6

COMM 105	Speech ***(or)***	
COMM 110	Conference and Group Discussion	3
CIT 226	Digital Audio/Video Programming	3
CIT 247	Game Development Project – Part 2	3
TOTAL CREDIT HOURS		**9**
TOTAL DEGREE CREDIT HOURS		**104**

Computer Literacy Certificate

COURSE		**CR**
Quarter 1		
CIT 095	Computer File Management	1
CIT 100	Computer Literacy	1

Quarter 2

CIT 094	Web Learning Tools	1

Quarter 3

CIT 101	PC Applications I	3
TOTAL CERTIFICATE CREDIT HOURS		**6**

Database Specialist Certificate

COURSE		**CR**
Quarter 1		
CIT 233	Expert Access	3
CIT 175	Systems Analysis 1	4
TOTAL CREDIT HOURS		**7**

Quarter 2

CIT 171	Database Administration/SQL	4
CIT 173	Database Programming	3
TOTAL CREDIT HOURS		**7**

Quarter 3

CIT 273	Database Systems	3
CIT 271	Data Mining and Data Warehousing	4
TOTAL CREDIT HOURS		**7**

Quarter 4

CIT 163	Visual Basic 1	4
CIT 200	Certification Review	1
TOTAL CREDIT HOURS		**5**
TOTAL CERTIFICATE CREDIT HOURS		**26**

Information Security Certificate

COURSE		CR
Quarter 1		
CIT 257	Network Security	3
CIT 258	Wireless Networking	3
TOTAL CREDIT HOURS		**6**
Quarter 2		
CIT 259	Advanced Network Security	3
CIT 260	Web Security	3
TOTAL CREDIT HOURS		**6**
Quarter 3		
CIT 276	Information Security Audit	3
TOTAL CREDIT HOURS		**3**
Quarter 4		
CIT 277	Computer Forensics	3
TOTAL CREDIT HOURS		**3**
Quarter 5		
CIT 278	Business Continuity and Disaster Recovery	3
TOTAL CREDIT HOURS		**3**
Quarter 6		
CIT 200	Certification Review	1
TOTAL CREDIT HOURS		**1**
TOTAL CERTIFICATE CREDIT HOURS		**22**

Network Administrator Certificate

COURSE		CR
Quarter 1		
CIT 250	Network Communication Systems	3
TOTAL CREDIT HOURS		**3**
Quarter 2		
CIT 251	Networking 2	3
CIT 253	TCP/IP	3
TOTAL CREDIT HOURS		**6**
Quarter 3		
CIT 252	Enterprise Networking	4
TOTAL CREDIT HOURS		**4**
Quarter 4		
CIT 255	Server Administration 1	4
TOTAL CREDIT HOURS		**4**
CIT 257	Network Security	3
CIT 258	Wireless Networking	3
CIT 200	Certification Test Review	1
TOTAL CREDIT HOURS		**7**
TOTAL CERTIFICATE CREDIT HOURS		**24**

Software Developer Certificate

COURSE		CR
Quarter 1		
CIT 145	HTML	3
CIT 179	C# Programming 1	4
CIT 163	Visual Basic 1	4
TOTAL CREDIT HOURS		**11**
Quarter 2		
CIT 169	JAVA Programming 1	3
CIT 279	C# Programming 2	4
CIT 263	Visual Basic 2	4
TOTAL CREDIT HOURS		**11**
Quarter 3		
CIT 269	Java Programming 2	3
CIT 264	Visual Basic 3	4
TOTAL CREDIT HOURS		**7**
Quarter 4		
CIT 173	Database Programming	3
CIT 270	Advanced Web Programming	4
TOTAL CREDIT HOURS		**7**
TOTAL CERTIFICATE CREDIT HOURS		**36**

CCNA Discovery Certificate

COURSE		CR
Quarter 1		
CIT 150	Networking for Home and Small Business	4
TOTAL CREDIT HOURS		**4**
Quarter 2		
CIT 152	Working at a Small-to-Medium Business	4
TOTAL CREDIT HOURS		**4**
Quarter 3		
CIT 154	Introducing Routing and Switching in the Enterprise	4
TOTAL CREDIT HOURS		**4**
Quarter 4		
CIT 156	Designing and Supporting Communications Technology	4
TOTAL CREDIT HOURS		**4**
Quarter 5		
CIT 158	CISCO Certification Review	1
TOTAL CERTIFICATE CREDIT HOURS		**17**

System Z Foundations Certificate

COURSE		CR
Quarter 1		
CIT 241	An Introduction to the Mainframe – z/OS Basics	4
TOTAL CREDIT HOURS		**4**
Quarter 2		
CIT 242	An Introduction to the Mainframe – Large Scale	4
TOTAL CREDIT HOURS		**4**
Quarter 3		
CIT 243	An Introduction to the Mainframe – Networking	4
TOTAL CREDIT HOURS		**4**
Quarter 4		
CIT 244	An Introduction to the Mainframe – Security	4
TOTAL CREDIT HOURS		**4**
TOTAL CERTIFICATE CREDIT HOURS		**16**

Computer Information Technology (CIT)

CIT 089 Introduction to FrontPage (W, SP, DL) 1 credit
This course introduces the student to Web page creation. The student will create a simple homepage using Microsoft FrontPage. Distance learning students are responsible for the required software.

Lecture: 0 hours – Lab: 2 hours
Prerequisite: CIT 094 Lab fee: $10.00

CIT 092 Introduction to HTML (A, SU, DL) 1 credit
Learn the most important topics of HTML, including creating an HTML document; viewing an HTML file in a Web browser; working with tag text elements; inserting special characters, lines, and graphics; creating hypertext links; working with color and images; creating text and graphical tables; using tables to enhance page design; creating and working with frames; and, controlling the behavior of hyperlinks on a page with frames.
Lecture: 0 hours – Lab: 2 hours
Prerequisite: None Lab fee: $10.00

CIT 093 Project Management (W, SU) 1 credit
Learn to develop, plan, schedule, and chart project information, and balance workloads for people working on several projects at once, tracking all phases of the project to meet deadlines and stay on budget. Uses Microsoft approved text.
Lecture: 0 hours – Lab: 2 hours
Prerequisite: None Lab fee: $10.00

CIT 094 Web Learning Tools (A, W, SP, SU, DL) 1 credit
This one-credit-hour course provides students with an introduction to Blackboard and to the Internet. Students will learn how to use Blackboard, find information, and explore the World Wide Web. Not open to students who have taken CIT 139.
Lecture: 0 hours – Lab: 2 hours
Prerequisite: None Lab fee: $10.00

CIT 095 Computer File Management (A, W, SP, SU) 1 credit
This one-credit-hour course is an introductory course on the Windows operating system. The objective of the course is to teach fundamental skills in working with the desktop, drives, folders, files, and applications. Not open to students who have taken CIT 121.
Lecture: 0 hours – Lab: 2 hours
Prerequisite: None Lab fee: $10.00

CIT 100 Computer Literacy (A, W, SP, SU, DL) 1 credit
This one-credit-hour course provides students with an introduction to computer technology, computer hardware, and computer software.
Lecture: 0 hours – Lab: 2 hours
Prerequisite: None Lab fee: $10.00

CIT 101 PC Applications I (A, W, SP, SU, DL)
3 credits
This course is designed to provide students an introduction to fundamental computer applications and technologies based on the International Computing Drivers' License (ICDL). ICDL is an international standard for measuring competence in those essential computer skills necessary to work and community in today's society. While the program is currently offered in more than 130 countries worldwide, the program is relatively new in the United States. Ohio is the first to create a state-wide focus on the ICDL program. The ICDL course includes 7 modules: 1. Concepts of Information Technology (IT); 2. Using the Computer and Managing Files; 3. Word Processing; 4. Spreadsheets; 5. Database; 6. Presentation; and 7. Information and Communication. This course is not designed for users with no familiarity with the computer. These computer users should take CIT 100 Computer Literacy before taking this course. Distance learning students are responsible for the required software.
Lecture: 2 hours – Lab: 2 hours
Prerequisites: DEV 030 and completion of ENGL 100 or ESL 100, or placement into ENGL 101 or 111 Lab fee: $10.00

CIT 102 PC Applications II (A, W, SP, SU, DL) 3 credits
This course covers advanced concepts and techniques used in word processing, spreadsheet, and database software. Microsoft has approved the textbooks used in CIT 101 and CIT 102, when used in a two-quarter sequence, as courseware for the Microsoft Office Specialist certification. Distance learning students are responsible for the required software.
Lecture: 2 hours – Lab: 3 hours
Prerequisite: CIT 101 Lab fee: $10.00

CIT 102A Word Integration (A, W, SP, SU, DL) 1 credit
Business-oriented features of Word such as merging letters, merging labels, page layout for newsletters, columns, object linking and embedding, outlines, and Web pages. Not open to students who have completed CIT 102.
Lecture: 0 hours – Lab: 2 hours
Prerequisite: CIT 101 Lab fee: $10.00

CIT 102B PC Business Excel (A, W, SP, SU, DL) 1 credit
Business-oriented features of Excel such as lists, filters, pivot tables and charts, 3-D formulas, data validation, auditing tools, and IF functions. A bridge course designed to prepare students for CIT 231 Expert Excel. Not open to students who have completed CIT 102.
Lecture: 0 hours – Lab: 2 hours
Prerequisite: CIT 101 Lab fee: $10.00

CIT 102C PC Business Access (A, W, SP, SU, DL) 1 credit
Business-oriented features of Access such as creating and manipulating forms and form data, creating and manipulating reports and report data, creating complex reports, relating tables, refining table design, using Access database tools, and integrating Access with other applications. This is a bridge course to prepare students for CIT 233 Expert Access. Not open to students who have completed CIT 102.
Lecture: 0 hours – Lab: 2 hours
Prerequisite: CIT 101 Lab fee: $10.00

CIT 103 Computer Concepts and Logic (A, W, SP, SU) 3 credits
This course is an introduction to computer information systems, computer concepts, and programming logic. Along with general computing concepts, this course will cover command line interaction, file management, programming logic using pseudo code, flowcharts, and VB.NET.
Lecture: 2 hours – Lab: 3 hours
Prerequisites: MATH 102 and completion of ENGL 100, ESL 100, or placement into ENGL 101 Lab fee: $15.00

CIT 110 Unified Modeling Language (UML) (A, W, SP, SU)
3 credits
This course teaches all of the major UML diagram types and the basic notation involved in creating and deciphering them. Students will learn to read, draw, and use this visual modeling language to create clear and effective blueprints for software development

projects.
Lecture: 2 hours - Lab: 3 hours
Prerequisites: CIT 103 Lab fee: $15.00

CIT 120 Foundations of Game Programming 1 (On Demand)
4 credits

This course introduces students to the rigorous field of interactive simulation and gaming. Students learn about the major components of modern simulations and games from both a design perspective and a technical perspective. Topics covered include: fundamentals of simulation / gaming, user interface design, human computer interaction, input/output paradigms, and an overview of simulation/game design process. Lab activities are designed to foster critical thinking and problem solving skills through the development of an understanding of the development process as well as interactive programming techniques through the creation of working interactive programs in a high-level programming language.
Lecture: 2 hours – Lab: 4 hours
Prerequisite: CIT 103 or permission of instructor Lab fee: $30.00

CIT 121 PC Operating Systems (A, W, SP, SU) 3 credits

This course examines common operating systems, from the Windows family to Linux and MAC. The student will also learn how operating systems interact with networks and hardware. The content of this course is designed to help a student prepare for the software portion of the CompTIA A+ certification exam.
Lecture: 2 hours – Lab: 3 hours
Prerequisite: CIT 103 Lab fee: $15.00

CIT 123 Workstation Installation/Configuration (A, W, SP)
3 credits

This course provides students with the necessary skills and knowledge to identify and perform tasks involved in supporting networks. The course is designed to prepare students to perform essential network administration tasks.
Lecture: 2 hours – Lab: 3 hours
Prerequisite: CIT 121 Lab fee: $20.00

CIT 127 Structured Programming (On Demand) 4 credits

CIT 127 is an introduction to the software development process through a modern block-structured language. Computer problem solving and program debugging strategies, data abstraction, modularity, parameter passing, and elementary data structures are covered in this class. Fundamentals of linked lists, stacks, and queues are also introduced. Recursion, recursively-defined data structures, and tree structures will be discussed.
Lecture: 2 hours – Lab: 4 hours
Prerequisite: CIT 120 Lab fee: $30.00

CIT 128 Concepts of 3D Graphics (On Demand) 4 credits

This course introduces students to concepts of 3D graphics, 3D modeling, and the mathematics necessary for 3D programming. Topics covered include: 3D model generation and texture generation, 3D trigonometric operations, 3D vector motion, and matrix transformations in 3-space. Lab activities focus upon creating textures & models and learning the mathematical principles that underlie the computer graphics field.
Lecture: 2 hours – Lab: 4 hours
Prerequisite: CIT 120 Lab fee: $30.00

CIT 130 MIS II: Project Management Fundamentals
(A, W, SP, SU) 3 credits

This course teaches the genesis of project management and its importance to improving the success of information technology projects. The student will demonstrate knowledge of project management terms and techniques such as the triple constraint of project management and the project life cycle using project management industry tools and techniques. *This course satisfies PMI's 35-hour education requirement to sit for the Project Management Professional (PMP) Exam.*
Lecture: 2 hours – Lab: 3 hours
Prerequisites: CIT 110 Lab fee: $15.00

CIT 137 Advanced Information Presentation (A, W, SP, SU) 3 credits

Learn how computer graphics are used to communicate information effectively. Computer lab assignments include chart format and data content. Students will learn how to create effective business presentations complete with graphs, organization charts, graphics, sound, movies, and Web links. Students will research a topic and develop presentations. Uses Microsoft approved text. Covers skill set for PowerPoint Expert certification.
Lecture: 2 hours – Lab: 3 hours
Prerequisite: CIT 101 Lab fee: $15.00

CIT 139 Web Essentials (A, W, SP, SU, DL) 3 credits

Students will learn the dynamics of the Web environment and explore World Wide Web (WWW) sites. Hands-on experience using the Internet will be emphasized. The midterm and final examinations will be taken in the Testing Center at Columbus State.
Lecture: 2 hours – Lab: 3 hours
Prerequisite: CIT 103 Lab fee: $10.00

CIT 145 HTML (A, SP, DL) 3 credits

This course provides an in-depth study of Hypertext Markup Language and its use in Web pages. Student will receive experience in TCP/IP, HTTP, and HTML in a Web server environment.
Lecture: 2 hours—Lab: 3 hours
Prerequisite: CIT 139

CIT 147 JavaScript Fundamentals (W, SU) 3 credits

This course provides an in-depth study of scripting languages that add interactivity to Web sites. Scripting languages such as JavaScript and pHp are extensions to hypertext markup language (html) that enable one to get data stored in Web page forms. With scripting languages, one may make intelligent Web pages that verify and calculate input and make presentation decisions based on said input. Students will be introduced to programming concepts to provide planning logic for programs.
Lecture: 2 hours – Lab: 3 hours
Prerequisite: CIT 145 Lab fee: $15.00

CIT 150 Networking for Home and Small Business (On Demand)

4 credits

This course is designed to teach students the fundamentals of networking while gaining the skills needed to obtain entry-level home and small business network installation jobs. Students gain

knowledge in networking theory and obtain hands-on experience in networking, PC configuration, Internet connectivity, wireless connectivity, and file/print sharing.
Lecture: 3 hours – Lab: 3 hours Lab fee: $20.00

CIT 151 Networking 1 (A, W, SP, SU) 3 credits
CIT 151 is an introductory course to Local Area Networks (LANs). This course will explore the current technology available for LANs including both hardware and software.
Lecture: 2 hours – Lab: 3 hours
Prerequisite: CIT 121 Lab fee: $15.00

CIT 152 Working at a Small-to-Medium Business (On Demand) 4 credits
This course is designed to teach students the basics of routing and remote access, addressing, and security. Students will gain hands-on experience with servers that provide e-mail services. Web spaces and authenticated access, network monitoring. Students will also learn troubleshooting skills as well as the necessary soft skills required for interacting with customers.
Lecture: 3 hours – Lab: 3 hours
Prerequisite: CIT 150 with 'C' or higher Lab fee: $20.00

CIT 154 Introducing Routing and Switching in the Enterprise (On Demand) 4 credits
The course is designed for students to learn the equipment applications and protocols installed in enterprise networks with an emphasis on switched networks, IP Telephony requirements and security. This course introduces advanced routing protocols such as Enhanced Interior Gateway Routing Protocol (EIGRP) and Open Shortest Path First (OSPF) Protocol. The hands-on exercises include configuration, installation and troubleshooting.
Lecture: 3 hours - Lab: 3 hours
Prerequisite: CIT 152 with 'C' or higher Lab fee: $20.00

CIT 156 Designing and Supporting Communications Technology (On Demand) 4 credits
This course is designed for students to learn basic network design, how to gather user requirements, establish proof-of-concept, and perform project management tasks. Students learn lifecycle services such as system upgrades, competitive analysis and system integration.
Lecture: 3 hours – Lab: 3 hours
Prerequisite: CIT 154 with 'C' or higher Lab fee: $20.00

CIT 158 CISCO Certification Review (On Demand) 1 credit
This course is designed to help students prepare for either the Cisco CCENT (Cisco Certified Entry Networking Technician) or the CCNA (Cisco Certified Network Associate). Upon completion of either the CCNA Discovery Track or the CCNA Exploration Track students can prepare for a Cisco certification exam. This is a self - paced course in which students can study for a certification exam.
Lecture: 0 hours – Lab: 3 hours
Prerequisite: CIT 156 with 'C' or higher Lab fee: $20.00

CIT 163 Visual Basic 1 (A, W, SP, SU, DL) 4 credits
CIT 163 emphasizes the essential aspects of creating the graphical user interface of a Visual Basic Windows program. The student also will learn fundamental aspects of coding a VB.NET program, along with more advanced topics such as manipulating MS Access databases, sequential file processing, error handling, and data validation. Software is provided to students.
Lecture: 2 hours – Lab: 5 hours
Prerequisite: CIT 103 Lab fee: $15.00

CIT 165 COBOL 1 (On Demand) 3 credits
Course offers an introduction to the concepts and techniques of batch COBOL programming using structured programming techniques. Index access methods are stressed.
Lecture: 2 hours – Lab: 3 hours
Prerequisite: CIT 163 Lab fee: $15.00

CIT 167 C++ Programming 1 (A, W, SP, SU) 4 credits
This is an introductory course in ANSI-Standard C++ Language Programming. Lab problems are targeted towards writing programs with business applications. Computer lab projects will provide hands-on experience in developing programs with an ANSI-Standard C++ compiler environment.
Lecture: 2 hours – Lab: 5 hours
Prerequisite: CIT 103 Lab fee: $15.00

CIT 169 Java Programming 1 (A, SP) 3 credits
This course is an introduction to the art of computer programming in Java. Included are features needed to construct Java Applets, Java applications, control structures, methods, arrays, character and string manipulation, graphics, and object-oriented programming.
Lecture: 2 hours – Lab: 3 hours
Prerequisite: CIT 103 Lab fee: $15.00

CIT 171 Database Administration/SQL (A, SP) 4 credits
This course provides the student with the necessary skills and knowledge to identify and perform the tasks involved in implementing and managing databases on MS SQL Server.
Lecture: 2 hours – Lab: 6 hours
Prerequisites: CIT 151 or CIT 173 Lab fee: $15.00

CIT 173 Database Programming (A, W, SP) 3 credits
This course presents an overview of Database Management Systems (DBMS) programming techniques and systems. The student will write programs using ORACLE.
Lecture: 2 hours – Lab: 3 hours
Prerequisite: CIT 103 Lab fee: $20.00

CIT 175 Systems Analysis 1 (A, W, SP) 4 credits
CIT 175 is an introduction to the fundamentals of traditional and object systems analysis, design, and project management. Emphasis will be placed on the Systems Development Life Cycle (SDLC), various flow diagrams, system requirements, project scheduling and managing analysis, and design activities.
Lecture: 3 hours – Lab: 2 hours
Prerequisite: CIT 103 Lab fee: $15.00

CIT 179 C# Programming I (A, W, SP, SU) 4 credits
This course provides an introduction to programming including the basic concepts of object-oriented programming. Students will learn about the C# programming language and how to write a C# program using methods, classes, selection and repetition and arrays.
Lecture: 2 hours – Labs: 4 hours

Prerequisites: CIT 103 Lab Fee: $20.00

CIT 200 Certification Test Review (A, W, SP, SU) 1 credit
Students will review topical material to take an industry certification exam relevant to their field of study.
Lecture: 0 hours – Lab: 3 hours
Prerequisite: CIT 175 Lab fee: $10.00

CIT 206 Foundations of Gaming Programming 2 (On Demand) 4 credits
This class is a continuation of CIT 120 and is intended to further develop the student's understanding of the simulation/gaming production and implementation process. Class activities are focused upon understanding of more advanced concepts and implementation techniques central to the game and simulation development process. Lab activities are focused upon the writing of simple, yet complete, interactive programs in a high-level programming language, like Java.
Lecture: 2 hours – Lab: 4 hours
Prerequisite: CIT 120 Lab fee: $30.00

CIT 212 Web Database Development (W, SU) 3 credits
Databases are now an integral part of the Internet and many Web sites use databases in the background to control their content. This course shows how to design and use databases for the Web using MySQL and PHP. No previous knowledge of MySQL or PHP is required.
Lecture: 2 hours – Lab: 2 hours
Prerequisite: CIT 145 Lab fee: $30.00

CIT 213 Designing an E-Commerce Website (A, SP) 3 credits
E-commerce has become a frequently used word in the area of business as the Web has become a popular way to sell to a larger market with less overhead. With a particular emphasis on consumer market, this course pushes not just the why, but also the practical application of creating a shopping cart. Students will learn how to create a usable e-commerce application from planning the application, designing the user interface and data store to implementing the entire application while taking into consideration the four fundamental marketing ingredients of product, price, place and promotion as informed by interactive media. MySQL database and PHP scripting language will be used to implement the e-commerce application. No previous knowledge of MySQL or PHP is required.
Lecture: 2 hours – Lab: 2 hours
Prerequisite: CIT 212 Lab fee: $30.00

CIT 226 Digital Audio/Video Programming (On Demand)3 credits
This course will explain the programming methods of how digital audio and video data are manipulated for use in a video game format, as well as teach students how to develop their own audio and video tools and filters.
Lecture: 2 hours – Lab: 2 hours
Prerequisite: CIT 206 Lab fee: $30.00

CIT 227 Data Structures and Algorithms (On Demand) 4 credits
CIT 227 is an introduction to the software development process through a modern block-structured language. Computer problem solving and program debugging strategies, data abstraction, modularity, parameter passing, and elementary data structures are discussed. Additional topics include fundamentals of linked lists, stacks, and queues. Recursion, recursively-defined data structures, and tree structures will be discussed.
Lecture: 2 hours – Lab: 4 hours
Prerequisite: CIT 127 Lab fee: $30.00

CIT 228 Computer Graphics 1 (On Demand) 4 credits
This course is intended to provide a rigorous introduction to 2D and 3D computer graphics concepts, techniques, and algorithms. Topics covered may include point plotting, line drawing, clipping, sprite animation, optimization, projection, shading, transformations, and other topics. Lab activities will include programming projects in two and three dimensional graphics varying from simple to complex.
Lecture: 2 hours – Lab: 4 hours
Prerequisite: CIT 128 Lab fee: $30.00

CIT 229 Computer Graphics 2 (On Demand) 4 credits
This class is a continuation of CIT228 and is intended to provide advanced mathematical concepts, techniques, and algorithms for 3D computer graphics. Topics covered may include texture mapping, curves and surfaces, image processing, alpha-blending, bump mapping, anti-aliasing, pixel-shaders, volumetric lighting, and other topics. Lab activities will include various programming projects using a modern 3D graphics API.
Lecture: 2 hours – Lab: 4 hours
Prerequisite: CIT 228 Lab fee: $30.00

CIT 230 MIS III: Project Management Case Studies (A, W, SP, SU)
Through the use of case studies, this course focuses on analyzing and implementing the concepts and techniques learned in the Project Management Fundamentals class.
Lecture: 2 hours - Lab: 3 hours
Prerequisites: CIT 130 Lab fee: $15.00

CIT 231 Expert Excel (A, SP, DL) 3 credits
Advanced features and formats in the spreadsheet application MS Excel. Uses Microsoft approved text. Covers skill set for Microsoft Expert certification. Distance learning students are responsible for the required software.
Lecture: 2 hours – Lab: 3 hours
Prerequisites: CIT 102 or 102B and MATH 102 Lab fee: $15.00

CIT 233 Expert Access (A, W, SP, SU, DL) 3 credits
Course presents a continuation of CIT 102 presenting database software, including file creation, screen and report generators. Emphasis is placed on Macros, Switchboards, Dialog boxes and VB applications. Uses Microsoft approved text. Covers skill sets for Access Expert certification.
Lecture: 2 hours – Lab: 3 hours
Prerequisites: CIT 102 or 102C and MATH 102
Lab fee: $15.00

CIT 241 An Introduction to the Mainframe – z/OS Basics (On Demand)
This course provides students the background, knowledge and skills necessary to begin using the basic facilities of a mainframe computer. Topics covered include: the mainframe in business today, including mainframe job roles; mainframe interfaces; Job Control Language;

mainframe hardware and architecture; middleware for the mainframe, application programming on the mainframe; networking, and security topics. This course is designed for someone with prior programming experience or education.
Lecture: 2 hours – Lab: 4 hours
Prerequisite: CIT 103, CIT 121 or permission of instructor
Lab fee: $30.00

CIT 242 An Introduction to the Mainframe – Large Scale Commercial Computing (On Demand) 4 credits
This course helps students gain an understanding of the reasons companies chose mainframe system to run (and grow) their large-scale computing environments. Topics include capacity, scalability, integrity and security, availability, access to large amounts of date, systems management and autonomic capabilities. This course is designed for someone with prior programming experience or education.
Lecture: 2 hours – Lab: 4 hours
Prerequisite: CIT 241 or permission of instructor Lab fee: $30.00

CIT 243 An Introduction to the Mainframe – Networking (On Demand) 4 credits
This course provides the background, knowledge and skills necessary to begin using the basic communication facilities of a mainframe system. Students will be given a broad understanding of networking principles and the hardware and software components necessary to allow the mainframe to participate in a high volume data communications networks. Topics covered include: overview of the importance of the mainframe environment, TCP/IP, SNA, SNA/IP implementation on the mainframe, networking operations, security and problem determination.
Lecture: 2 hours – Lab: 4 hours
Prerequisite: CIT 241 or permission of instructor Lab fee: $30.00

CIT 244 An Introduction to the Mainframe – Security (On Demand) 4 credits
This course provides the background, knowledge and skills necessary to begin using the basic security facilities of a mainframe system. Students will have a broad understanding of both the security principles and the hardware and software components needed to insure that the mainframe resources and environment are secure. Topics covered include elements of security, systems architecture and virtualization, cryptography, as well as security in operating systems, networks, middleware and applications.
Lecture: 2 hours – Lab: 4 hours
Prerequisite: CIT 241 or permission of instructor Lab fee: $30.00

CIT 245 Introduction to Game Prototyping and Development (On Demand) 4 credits
This course is the first of a 3 part sequence in which students put into practice all of the information and knowledge gained in the previous courses. Students are introduced to the XNA Game Studio Express and the XNA platform, which is designed for game developers to easily create video games for Windows and the Xbox 360 console.
Lecture: 4 hours – Lab: 0 hours
Prerequisite: CIT 206, CIT 227, CIT 229 Lab fee: $30.00

CIT 246 Game Development Project – Part 1 (On Demand) 3 credits
This course is the second of a 3-part sequence in which students put into practice all of the information and knowledge gained in the previous courses. In this sequence the students first identify, then build, the necessary components for a full working 3D simulation/game engine. Lab activities focus upon designing and implementing simple simulations/games upon the XNA platform.
Lecture: 1 hour – Lab: 4 hours
Prerequisite: CIT 245 Lab fee: $30.00

CIT 247 Game Development Project – Part 2(On Demand) 3 credits
This course is the third of a 3-part sequence in which students put into practice all of the information and knowledge gained in the previous courses. In this sequence the students first identify, then build, the necessary components for a full working 3D simulation/game engine. Lab activities focus upon designing and implementing simple simulations/games upon the XNA platform.
Lecture: 1 hour – Lab: 4 hours
Prerequisite: CIT 246 Lab fee: $30.00

CIT 250 Network Communication Systems (A, W, SP, SU, DL) 3 credits
Students will learn the fundamentals of data communication and computer networks. Course includes basic communication theory as applied to both digital and analog communication networks. Students will also learn the basics of the OSI layered network model and characteristics of the wide area and local area data communication networks.
Lecture: 2 hours – Lab: 3 hours
Prerequisite: CIT 151 Lab fee: $10.00

CIT 251 Networking 2 (A, SP) 3 credits
Course is a continuation of CIT 151. Students will learn advanced local area network concepts and how they can be applied to support enterprise-wide information management of a large organization. The student will learn to install and configure a network using UNIX.
Lecture: 2 hours – Lab: 3 hours
Prerequisite: CIT 151 Lab fee: $5.00

CIT 252 Enterprise Networking (W, SP) 4 credits
CIT 252 is a continuation of CIT 251. Students will learn to use the Microsoft Windows Server environment to support small and enterprise-wide information management systems. Students will complete a series of laboratory assignments using the Windows Server environment.
Lecture: 2 hours – Lab: 4 hours
Prerequisite: CIT 251 Lab fee: $10.00

CIT 253 TCP/IP (A, SP, DL) 3 credits
This course demonstrates the concepts and analyzes the results using utilities provided by Windows. The course covers the aspects of TCP/IP such as history, client/server model, addressing, bridging, and routing/DHCP, Windows domains, and name services.
Lecture: 2 hours – Lab: 3 hours
Prerequisite: CIT 252 Lab fee: $10.00

CIT 255 Server Administration I (A) 4 credits
Students will learn how to perform administration tasks using MS

Windows networks. Elements include management of data storage, monitoring event logs, designing and administering Windows security model, and designing and developing a security needs analysis. The student will also utilize the client and server technologies used in designing and implementing Web services such as network address translators, proxy servers, firewalls, and Internet Information Services.
Lecture: 2 hours – Lab: 5 hours
Prerequisite: CIT 252 Lab fee: $10.00

CIT 257 Network Security (W) 3 credits
This course focuses on the underlying theory of computer security by covering topics such as e-security, cryptography, security architecture and management, laws and ethics, telecommunications, network and Internet security, risk assessment and auditing, and firewalls.
Lecture: 2 hours – Lab: 3 hours
Prerequisite: CIT 255 Lab fee: $10.00

CIT 258 Wireless Networking (SP) 3 credits
This course is designed to provide students and network administrators with an in-depth knowledge of wireless LAN basics including IEEE 802.11, Wi-Fi, Bluetooth, WiMax technologies, encryption techniques, site surveys, securing, troubleshooting, monitoring, and managing wireless LANs, while preparing the students for CWNA certification.
Lecture: 2 hours – Lab: 3 hours
Prerequisite: CIT 255 Lab fee: $25.00

CIT 259 Advanced Network Security (On Demand) 3 credits
This course is designed to introduce students and network administrators to comprehensive and advanced topics related to network security. This course is an extension to the Network Security course and includes concepts related to network firewall security, intrusion detection techniques, VPNs, IP security, installation and troubleshooting firewall technology while preparing the student for an industry-standard certification.
Lecture: 2 hours – Lab: 3 hours
Prerequisite: CIT 257 Lab fee: $25.00

CIT 260 Web Security (On Demand) 3 credits
This course is designed for students, Web developers, and network administrators who want to gain knowledge related to Internet/Intranet security while learning how to protect Web sites from internal and external threats. This course will teach students about the concepts and techniques related to securing Web sites while exploring common vulnerabilities of Web sites as well as implementing secure communications across unsecured networks. Students gain hands-on experience implementing Web security using a network server-based operating system.
Lecture: 2 hours – Lab: 3 hours
Prerequisite: CIT 259 Lab fee: $25.00

CIT 263 Visual Basic 2 (W, SP, DL) 4 credits
This is a continuation of CIT 163. Emphasizes advanced topics in VB.NET such as database programming, including SQL, Active X controls, and object-oriented programming. Software is provided to students.
Lecture: 2 hours – Lab: 5 hours
Prerequisite: CIT 163 Lab fee: $15.00

CIT 264 Visual Basic 3 (A) 4 credits
Visual Basic 3 is a continuation of CIT 263, Visual Basic 2. Emphasis is on advanced topics, including deploying Web forms that utilize a database. Advanced features of Visual Studio.NET are explored and applied as they relate to connectivity with SQL Server, Oracle, and other databases.
Lecture: 2 hours – Lab: 5 hours
Prerequisite: CIT 263 Lab fee: $15.00

CIT 265 COBOL 2 (On Demand) 3 credits
Course is a continuation of CIT 165. Sort procedures, sequential access, table handling, and SQL with COBOL are stressed.
Lecture: 2 hours – Lab: 3 hours
Prerequisite: CIT 165 Lab fee: $15.00

CIT 266 Interactive COBOL (On Demand, DL) 3 credits
Course covers interactive programming using applicable software.
Lecture: 2 hours – Lab: 3 hours
Prerequisite: CIT 165 Lab fee: $15.00

CIT 267 C++ Programming 2 (A, SP) 4 credits
This is an advanced course in ANSI-Standard C++ Language programming. Lab problems are targeted towards writing programs that explore data structures using object-oriented techniques. Computer lab projects will provide further hands-on experience in developing programs with an ANSI-Standard C++ compiler environment including debugging techniques.
Lecture: 2 hours – Lab: 3 hours
Prerequisite: CIT 167 Lab fee: $15.00

CIT 268 Object-Oriented COBOL (On Demand, DL) 3 credits
CIT268 is an introduction to object-oriented COBOL using classes and objects. Object analysis and object design concepts are introduced for COBOL programming. Programs written are runable on personal computers using an ANSI-standard COBOL compiler.
Lecture: 2 hours – Lab: 3 hours
Prerequisite: CIT 165 Lab fee: $15.00

CIT 269 Java Programming 2 (W, SU) 3 credits
This course is a continuation of Java Programming 1. More advanced work in Java applets, applications, structures, methods, and arrays will be included.
Lecture: 2 hours – Lab: 3 hours
Prerequisite: CIT 169 Lab fee: $15.00

CIT 270 Advanced Web Programming (A, SP) 4 credits
This course focuses on using the Common Gateway Interface (CGI) and Active Server Pages (ASP) to create dynamic, interactive Web content. Both Perl and VBScript are taught in this course. Although no prior experience with either programming language is required, students are expected to understand basic programming concepts. Practical, real-world lab exercises provide students with hands-on experience, including working with the Apache Web Server and Microsoft Internet Information Server (IIS).
Lecture: 2 hours – Lab: 5 hours
Prerequisite: CIT 147 Lab fee: $15.00

CIT 271 Data Mining and Warehousing (W, SU) 4 credits
This course provides students with the necessary skills and knowledge to design and develop relational databases and provides an introduction to data mining and data warehousing concepts.
Lecture: 2 hours – Lab: 6 hours
Prerequisite: CIT 171 Lab fee: $15.00

CIT 273 Database Systems (W, SU) 3 credits
CIT 273 presents an introduction to database systems in theory and application. Students will design and build databases using ORACLE.
Lecture: 2 hours – Lab: 3 hours
Prerequisite: CIT 173 Lab fee: $20.00

CIT 275 Systems Analysis 2 (SP) 4 credits
Students will use techniques learned in Systems Analysis 1 to produce various flow diagrams, project schedules, and timetables. They will also explore object-oriented design and unified modeling language (UML) in this class. Students will work in teams to learn to prepare and present a systems proposal and how to implement and complete a software project.
Lecture: 3 hours – Lab: 2 hours
Prerequisite: CIT 175 Lab fee: $15.00

CIT 276 Information Security Audit (On Demand) 3 credits
This course is designed for students, web developers, and network administrators who want to gain knowledge related to information and database security focusing on the areas of security, auditing, and implementation.
Lecture: 2 hours – Lab: 3 hours
Prerequisite: CIT 259 Lab fee: $25.00

CIT 277 Computer Forensics (On Demand) 3 credits
This course is designed for students and systems administrators involved in responding to security incidents and applying computer forensics skills. This course focuses on the latest technologies in computer forensics techniques in order to recognize and respond to security threats.
Lecture: 2 hours – Lab: 3 hours
Prerequisite: CIT 259 Lab fee: $25.00

CIT 278 Business Continuity and Disaster Recovery (On Demand)
This course is designed for students and network administrators who need to obtain knowledge and experience for disaster recovery. This course will provide methods used to identify vulnerabilities and take appropriate countermeasures to prevent and mitigate failure risks for an organization. This course takes an enterprise-wide approach to developing a disaster recovery plan.
Lecture: 2 hours – Lab: 3 hours
Prerequisite: CIT 276 Lab fee: $25.00

CIT 279 C# Programming II (A, W, SP, SU) 4 credits
This course provides a continuation of the basic concepts of object-oriented programming using the C# programming language. Students will learn more advanced programming using inheritance, exception handling, and controls. Students will also use files and streams for input and output.
Lecture: 2 hours – Lab: 4 hours
Prerequisite: CIT 179 Lab fee: $20.00

CIT 280 ACP Examination (A, SP) 1 credit
Students will review topics covered in all previous technical courses. Students will be eligible to take the Associate Computer Professional (ACP) examination administered by the Institute for the Certification of Computer Professionals (ICCP). All software developer students in Computer Information Technology will take CIT 280 during their graduating quarter.
Lecture: 0 hours – Lab: 3 hours Lab fee: $40.00

CIT 281 Capstone for Software Developer (A, SP) 5 credits
In this capstone course, software developer majors will work in assigned groups to convert a manual business process to a computer-based solution. Using project management techniques, students will design, present, and program their solution using a Web user interface and database technology. Emphasis will be placed on the ability to demonstrate technical expertise and software skills required for employment.
Lecture: 2 hours – Lab: 8 hours
Prerequisites: CIT 263 and CIT 275 Lab fee: $30.00

CIT 282 Capstone for Net Admin./User Support/Web Dev. (A, SP) 5 credits
This is the capstone course for the User Support, Networking Administrator, and Web Developer tracks. Students will work in small groups or individually to design and develop a typical business system. Students in the Software Developer track take CIT 281.
Lecture: 2 hours – Lab: 8 hours
Prerequisites: See table below. Lab fee: $30.00

Networking Tech.	Web Dev.
CIT 123	CIT 169
CIT 253	CIT 233
CIT 255	CIT 270
CIT 271	

3 credits

CIT 283 MIS Internship (On Demand) 3 credits
Supervised on-the-job application of knowledge and skills learned in the classroom.
Lecture: 2 hours – Lab: 2 hours
Prerequisites: CIT 230 Lab fee: $15.00

CIT 290 CIT Seminar (On Demand) 1 credit
Supervised on-the-job application of knowledge and skills acquired in the classroom
Lecture: 1 hour – Lab: 0 hours
Prerequisites: Must be a Computer Information Technology major with GPA of a least 2.5; must have completed 12 hours in the technology or have permission of instructor.
Corequisites: CIT 299 Lab fee: $3.00

Special Topics in CIT

Special Topics in CIT is a series of courses specifically designed to meet the needs of the constantly changing business community and student population. Courses will be designed with the advice of the particular group requesting the course and approval by the department chairperson.

Lecture: 0 hours – Lab: 1–5 hours Lab fee: $5.00

CIT 291 Special Topics in CIT 1 (On Demand) 1–5 credits
CIT 292 Special Topics in CIT 2 (On Demand) 1–5 credits
CIT 293 Special Topics in CIT 3 (On Demand) 1–5 credits
CIT 294 Special Topics in CIT 4 (On Demand) 1–5 credits
CIT 295 Special Topics in CIT 5 (On Demand) 1–5 credits
CIT 296 Special Topics in CIT 6 (On Demand) 1–5 credits

CIT 297 CIT Internship/Field Experience 1 (On Demand) 1 credit

The student works 12 hours per week in an activity that relates to the student's occupational objective.

Lecture: 0 hours – Lab: 12 hours

CIT 298 CIT Internship/Field Experience 2 (On Demand) 2 credits

The student works 24 hours per week in an activity that relates to the student's occupational objective.

Lecture: 0 hours – Lab: 24 hours

CIT 299 CIT Practicum (On Demand) 4 credits

The student works 28 hours per week in an activity that relates to the student's occupational objective.

Lecture: 0 hours – Lab: 28 hours

Prerequisites: Computer Information Technology major with GPA of a least 2.5. Completion of 12 hours in technology or permission of instructor.

Corequisites: CIT 290 Lab fee: $3.00

COMPUTER INFORMATION TECHNOLOGY

Chairperson, Mary A. Vaughn, A.B., *St. Peter's College*, M.A., *The Ohio State University*

Faculty, Associate Professor Thomas (Ty) Fogle, B.A., *Ohio University*, PMP, A+, M.S., *The Ohio State University;* Associate Professor Mary Insabella, B.S., *University of Pittsburgh*, M.S., *University of Pittsburgh;* Professor Jeffrey Mellman, B.S., *The Ohio State University*, M.Ed., *Ohio University;* Associate Professor Patricia Opong, B.S., *Ohio University*, M.S., *Central Michigan University;* Associate Professor James Reed, B.S., B.A., *Franklin University*, M.B.A., *University of Dayton;* Professor Gloria Rogiers, B.A., *University of the Virgin Islands*, M.A., *Central Michigan University;* Instructor Jorge Vallejos B.S., M.S., *Kent State University*; Instructor Jeremy Porter, B.S., *The Ohio State University, M.S., DeVry University, MCT,CTT+, MCSE+Security, CCNA, A+, Security+*

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